

IN THE CLAIMS

Claim 1 (original): A method of isolating decay fungi which will have a positive effect on non-sterilized wood and/or wood products and/or wood processing by providing a lignocellulosic and/or extractives decrease in the wood and a minimisation or inhibition of the detrimental effects of competitor fungi, the method comprising or including the steps of:

- 1) collection of decay fungi (whether from nature or otherwise);
- 2) preparation of a cultivation of the decay fungi;
- 3) subjecting the cultivated decay fungi to a selection process to distinguish desired decay fungi from unwanted fungi, wherein the selection process includes or comprises subjecting the cultivated decay fungi to both:
 - a) a test to establish production of oxidative enzymes; and
 - b) a test to establish the ability of the cultivated decay fungi to outgrow and/or inhibit the development of competitor fungi, and wherein the desired decay fungi will satisfy both tests;
- 4) isolation of the desired decay fungi.

Claim 2 (original): The method according to claim 1 wherein the method additionally includes or comprises the step of identifying the decay fungi at any time.

Claim 3 (original): The method according to claim 1 wherein the

decay fungi has a minimal deleterious effect on the wood and/or wood products and/or wood processing.

Claim 4 (original): The method according to claim 3 wherein the decay fungi has a minimal deleterious effect on cellulose yield and/or polymerisation.

Claim 5 (original): The method according to claim 1 wherein the collection of step 1) is from nature.

Claim 6 (original): The method according to claim 5 wherein the collection of step 1) is from soil and/or humus.

Claim 7 (original): The method according to claim 5 wherein the collection of step 1) occurs on wood and/or tree(s).

Claim 8 (original): The method according to claim 7 wherein the collection of step 1) occurs on trees and/or wood of the species *Pinus radiata* and/or on trees and/or wood of *Eucalyptus* spp.

Claim 9 (original): The method according to claim 1 wherein the cultivation of step 3) occurs between particulate wood including wood chips, sawdust or the like as a solid cultivation, or in liquid supplemented growth media as a liquid cultivation; or in a combination of both as a semi-solid cultivation.

Claim 10 (original): The method according to claim 9 wherein the particulate wood of the solid and/or semi-solid cultivation is *Pinus radiata* or *Eucalyptus* spp.

Claim 11 (original): A biologically pure culture of decay fungi which will have a positive effect on non-sterilized wood and/or wood products and/or wood processing by providing a lignocellulosic and/or extractives decrease in the wood and a minimisation or inhibition of the detrimental effects of competitor fungi isolated according to the above method.

Claim 12 (currently amended): A The culture according to claim 11 wherein the decay fungi are of the class Basidiomycetes, order Aphyllophorales.

Claim 13 (currently amended): A The culture according to claim 12 wherein the decay fungi are selected from the genera comprising *Pleurotus* spp., *Coriolus* spp., *Phanerochaete* spp., *Phlebia* spp., *Ganoderma* spp., and/or *Lentinus* spp.

Claim 14 (currently amended): A The culture according to claim 13 wherein the decay fungi is the *Pleurotus* sp. strain 10-P and/or 24-P and/or the *Coriolus* sp. strain 15-A.

Claim 15 (currently amended): A The culture according to claim 13

wherein the decay fungi is a strain of *Coriolus versicolor* having all the identifying characteristics of the fungi of AGAL Accession Number NM02/32225.

Claim 16 (currently amended): A The culture according to claim 11 wherein the decay fungi are of the class Ascomycetes, order Plectoascomycetes.

Claim 17 (original): A biologically pure culture of decay fungi which when subjected to the steps of:

- 1) preparation of a cultivation of the decay fungi;
- 2) subjecting the cultivated decay fungi to a selection process to distinguish desired decay fungi from unwanted fungi, wherein the selection process includes or comprises subjecting the cultivated decay fungi to both:
 - a) a test to establish production of oxidative enzymes; and
 - b) a test to establish the ability of the cultivated decay fungi to outgrow and/or inhibit the development of competitor fungi, and wherein the desired decay fungi will satisfy both tests;
- 3) isolation of the desired decay fungi; will, when applied to wood, have a positive effect on non-sterilized wood and/or wood products and/or wood processing by providing a lignocellulosic and/or extractives decrease in the wood and a minimisation or inhibition of the detrimental effects of competitor fungi.

Claim 18 (currently amended): A The culture according to claim 17 wherein the decay fungi has a minimal deleterious effect on the wood and/or wood products and/or wood processing.

Claim 19 (currently amended): A The culture according to claim 18 wherein the decay fungi has a minimal deleterious effect on cellulose yield and/or polymerisation.

Claim 20 (original): — — A method for the preparation of a composition which will have a positive effect on non-sterilized wood and/or wood products and/or wood processing by providing a lignocellulosic and/or extractives decrease in the wood and a minimisation or inhibition of the detrimental effects of competitor fungi, the method comprising or including the steps of:

- a) isolation of decay fungi as disclosed in the above method;
- b) preparation of a reproductively viable form of said decay fungi;
- c) use of said reproductively viable form of said decay fungi, optionally together with one or more acceptable carriers, diluents, or adjuvants, in the preparation of a composition.

Claim 21 (original): The method of claim 20 wherein the isolation step a) and/or the preparation step b) of the method includes the preparation of the decay fungi between solid wood.

Claim 22 (original): The method of claim 21 wherein said solid

wood comprises raw wood residuals exemplified by but not limited to shavings, sawdust and/or chips.

Claim 23 (original): The method of claim 21 wherein the solid wood is of the same genus and/or species as the wood for pulp production to which the composition is to be subsequently applied.

Claim 24 (original): The method of claim 21 wherein the solid wood is *Pinus radiata* or *Eucalyptus* spp.

Claim 25 (original): The method of claim 20 wherein the preparation of step b) of a reproductively viable form of the decay fungi is by massive vegetative reproduction.

Claim 26 (original): The method of claim 20 wherein the preparation of step b) occurs between particulate wood including wood chips, sawdust or the like as a solid cultivation, or in liquid supplemented growth media as a liquid cultivation, or in a combination of both as a semi-solid cultivation.

Claim 27 (original): The method of claim 26 wherein the particulate wood of the solid and/or semi-solid cultivation is *Pinus radiata* or *Eucalyptus* spp.

Claim 28 (original): The method of claim 20 wherein the carrier is H₂O.

Claim 29 (original): A composition comprising decay fungi which will have a positive effect on non-sterilized wood and/or wood products and/or wood processing by providing a lignocellulosic and/or extractives decrease in the wood and a minimisation or inhibition of the detrimental effects of competitor fungi, prepared according to the above method.

Claim 30 (original): The composition according to claim 29 wherein the composition is liquid.

Claim 31 (original): The composition according to claim 29 wherein the composition is solid.

Claim 32 (original): The composition according to claim 29 wherein the decay fungi has a minimal deleterious effect on the wood and/or wood products and/or wood processing.

Claim 33 (original): The composition according to claim 32 wherein the decay fungi has a minimal deleterious effect on cellulose yield and/or polymerisation.

Claim 34 (original): The composition according to claim 29 wherein the decay fungi is the Pleurotus sp. strain 10-P and/or 24-P and/or the Coriolus sp. strain 15-A.

Claim 35 (original): The composition according to claim 29

wherein the decay fungi is, or the composition includes, *Coriolus versicolor* AGAL Accession Number NM02/32225.

Claim 36 (original): A method of enhancing wood or wood products quality, the method comprising or including the steps of:
a) preparation of a composition comprising or including decay fungi according to the above method;

b) application of the composition to non-sterilized wood subsequently used for pulp production.

Claim 37 (original): The method according to claim 36 wherein the application of step b) of the composition is manual and/or automated.

Claim 38 (original): The method according to claim 36 wherein the application in step b) of the composition is to non-sterilized wood in the forest and/or storing yard and/or mill.

Claim 39 (original): The method according to claim 36 wherein the application in step b) of the composition is to non-sterilized wood at a ratio of between about 0.05% and about 5% (w/w) decay fungi/dry weight of wood.

Claim 40 (original): The method according to claim 36 wherein the application in step b) of the composition is to non-sterilized wood which has a moisture content of from about 60% to about 80%.

Claim 41 (original): The method according to claim 36 wherein the application in step b) of the composition is to non-sterilized wood which comprises logs with or without bark and/or chips.

Claim 42 (original): The method according to claim 36 wherein the method includes the step of maintaining the wood to which the composition has been applied under conditions which allow growth of the decay fungi for a term sufficient to allow a minimisation or inhibition of the detrimental effects of competitor fungi.

Claim 43 (original): The method according to claim 36 wherein the method includes the step of maintaining the wood to which the composition has been applied under conditions which allow growth of the decay fungi for a term sufficient to effect a lignocellulosic and/or extractives decrease in said wood.

Claim 44 (original): The method according to claim 36 wherein in step b) the composition is applied so as to be in contact with the non-sterilized wood for a period of from about 4 days to about 4 months.

Claim 45 (original): The method according to claim 44 wherein in step b) the composition is applied to wood chips so as to be in contact with wood for a period of about 7 days.

Claim 46 (original): The method according to claim 36 wherein

in step b) the composition is applied so that greater than 50% of the wood is colonized by the decay fungi.

Claim 47 (original): The method according to claim 36 wherein the decay fungi is, or the composition includes, Pleurotus sp. strain 10-P and/or 24-P and/or the Coriolus sp. strain 15-A.

Claim 48 (original): The method according to claim 36 wherein the decay fungi is, or the composition includes, Coriolus versicolor AGAL Accession Number NM02/32225.

Claim 49 (original): The wood or wood products prepared according to the method of claim 36.

Claim 50 (currently amended): A method of improved chemical and/or modified chemical pulping, the method comprising or including:

- a) preparing a composition comprising or including decay fungi able to outgrow competitor fungi on non-sterilized wood;
- b) applying the composition to non-sterilized wood to be used for pulp production; and
- c) pulping said wood in a chemical and/or modified chemical pulping process.

Claim 51 (original): The method according to claim 50 wherein the pulping of step c) is in a kraft and/or modified kraft process.

Claim 52 (original): The method according to claim 50 wherein

the preparation of step a) of a composition comprising or including decay fungi is by a method according to claim 20.

Claim 53 (original): The method according to claim 50 wherein the application of step b) of the composition provides one or more of an increase in pulping efficiency, increased yield, and/or lower kappa numbers.

Claim 54 (original): The method according to claim 50 wherein the application of step b) of the composition provides a reduction in pulping energy consumption.

Claim 55 (original): The method according to claim 50 wherein the application of step b) of the composition provides a reduction in pulping chemical processing liquor consumption.

Claim 56 (original): The method according to claim 50 wherein the application of step b) of the composition is manual and/or automated.

Claim 57 (original): The method according to claim 50 wherein the application in step b) of the composition is to non-sterilized wood in the forest and/or storing yard and/or mill.

Claim 58 (original): The method according to claim 50 wherein the application in step b) of the composition is to non-sterilized

wood at a ratio of between about 0.05% and about 5% (w/w) decay fungi/dry weight of wood.

Claim 59 (original): The method according to claim 50 wherein the application in step b) of the composition is to non-sterilized wood which has a moisture content of from about 60% to about 80%.

Claim 60 (original): The method according to claim 50 wherein the application in step b) of the composition is to non-sterilized wood which comprises logs with or without bark and/or chips.

Claim 61 (original): The method according to claim 50 wherein the method includes the step of maintaining the wood to which the composition has been applied under conditions which allow growth of the decay fungi for a term sufficient to allow a minimisation or inhibition of the detrimental effects of competitor fungi.

Claim 62 (original): The method according to claim 50 wherein the method includes the step of maintaining the wood to which the composition has been applied under conditions which allow growth of the decay fungi for a term sufficient to effect a lignocellulosic and/or extractives decrease in said wood.

Claim 63 (original): The method according to claim 50 wherein in step b) the composition is applied so as to be in contact with the non-sterilized wood for a period of from about 4 days to about

4 months.

Claim 64 (original): The method according to claim 63 wherein in step b) the composition is applied to wood chips so as to be in contact with wood for a period of about 7 days.

Claim 65 (original): The method according to claim 50 wherein in step b) the composition is applied so that greater than 50% of the wood is colonized by the decay fungi.

Claim 66 (original): The method according to claim 50 wherein the decay fungi is, or the composition includes, Pleurotus sp. strain 10-P and/or 24-P and/or the Coriolus sp. strain 15-A.

Claim 67 (original): The method according to claim 50 wherein the decay fungi is, or the composition includes, Coriolus versicolor AGAL Accession Number NM02/32225.

Claim 68 (currently amended): A pulp prepared according to ~~the method of any of claims 50 to 65~~ claim 50.

Claim 69 (original): A biologically pure culture of Coriolus versicolor AGAL Accession Number NM02/32225.

Claim 70 (currently amended): The use of Coriolus vesicular AGAL Accession Number NM02/32225 in a composition according to ~~any of~~

~~claims 29 to 35~~ claim 29.

Claim 71 (currently amended): The use of Coriolus vesicular AGAL
Accession Number NM02/32225 in a method according to ~~any of claims~~
~~to 36 to 48~~ claim 36.

Claim 72 (currently amended): The use of Coriolus vesicular AGAL
Accession Number NM02/32225 in a method according to ~~any of claims~~
~~to 50 to 67~~ claim 50.